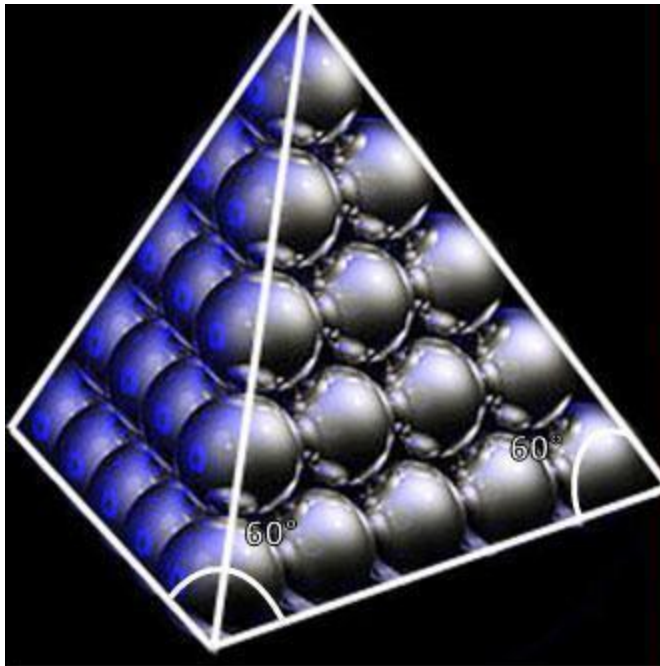


## 10. Shivani

**Program Name:** Shivani.java

**Input File:** shivani.dat



You and Shivani are doing a project for your ancient architecture class, and you need to go buy materials. Your project will be a triangular pyramid made of spheres. The top of the pyramid will be one sphere, and the layer below it will be 3 spheres. The  $n$ th layer in the pyramid will have  $n$  more spheres than the one above it, so  $3 + 3 = 6$ , 6 spheres in the 3<sup>rd</sup> layer, and so on. You will be given  $n$ , the number of layers, and you need to determine how many spheres you will need for the pyramid project.

**Input:** The first line will contain a single integer  $m$  that indicates the number of data sets that follow. Each of the following  $m$  lines will contain an integer  $n$ , the number of layers in your triangular pyramid.

**Note:** The values for  $n$  may be quite large,  $n$  may be greater than  $2^{64}$  (meaning it is too big for an int or long).

**Output:** Output the number of spheres needed to form the triangular pyramid with  $n$  layers, as shown in the sample output.

**Sample input:**

```
4
6
12
25
53
```

**Sample output:**

```
56
364
2925
26235
```